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12A, 12B, 13A, 13B, 14A, 14B, 15A, 15B, 16A and 16B

[26]

FIGS. ~~12A through 16B~~ are cross-sectional views for explaining a method of manufacturing the optical switch according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[27]

Hereinafter, an optical switch according to an exemplary embodiment of the present invention will be described in detail with reference to the attached drawings.

[28]

As shown in FIG. 5, optical input fibers 20a and 20b, and optical output fibers 30a and 30b are arranged at around the central point P at an angle of about 90 degrees. A rotating mirror 10 is positioned at the central point P. As in a general optical switch, the optical input fibers 20a and 20b, and the optical output fibers 30a and 30b are inserted into trenches 41 formed in a substrate 40. The trenches 41 are arranged at around or at about the central point P at an angle of about 90°. As shown in FIG. 6, the rotating mirror 10 is fixed to posts 42 formed on the substrate 40 and supported by torsion bars 43 that extend from the posts 42 in parallel with the substrate 40. The torsion bars 43 support the rotating mirror 10 so that the rotating mirror 10 is parallel with the substrate 40. When the rotating mirror 10 turns due to an electrostatic force, the torsion bars 43 provide a returning force to the rotating mirror 10 so that the rotating mirror 10 returns to the original position. The torsion bars 43 extend toward a turning axis X-X at an angle of approximately 45 degrees with the optical input fibers 20a and 20b and the optical output fibers 30a and 30b. A well 45 is formed under the rotating mirror 10. The well 45 has a